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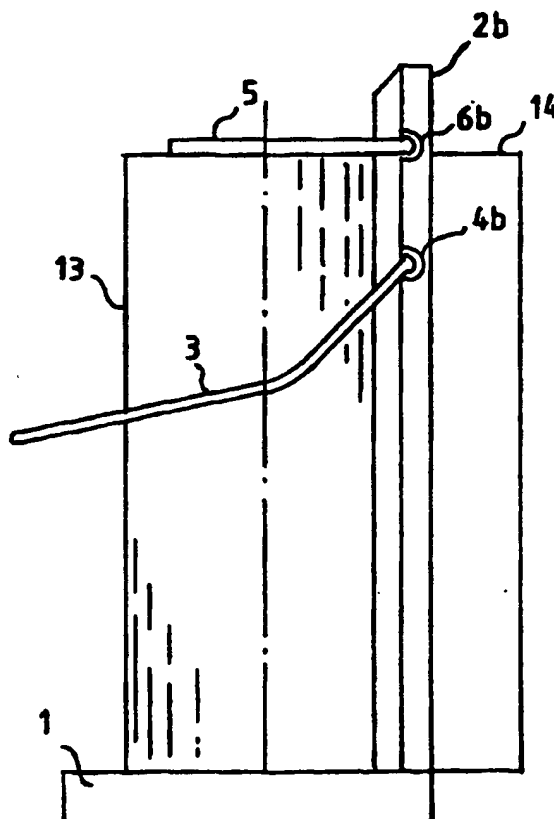
## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(54) Title: **PAPER ROLL HOLDER WITH BRAKE FOR DISPENSING USE**

## (57) Abstract

The invention relates to a paper roll holder with brake for dispensing use of paper rolls or the like. The paper roll holder comprises a heavy base (1) to which two column-like parts (2a) and (2b) are fixed, against which the paper roll rests and in between which the paper runs and which at their ends have suitably shaped cutting edges or serration, if the paper web is not perforated. A ring and wedge-shaped part (3) as well as a cover (5) with a spring (7) fixed to it are mounted in bearings to parts (2a) and (2b) and a spring (9) fixed to the base are all pressing the paper roll against the column-like parts (2a) and (2b). The form, roughness and weight of parts (3) and (5) and the spring forces of springs (7) and (9) are chosen so that by pulling the paper it easily unwinds but the paper breaks off with a little jerk using only one hand. In the roll holder also rolls without core can be used and then springs are not needed, or the holder can be built without the ring-shaped part (3), in which case only springs (7) and (9) press the paper roll against parts (2a) and (2b). The holder is normally placed on the table but can also by transforming the base be fixed to the wall.



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# PAPER ROLL HOLDER WITH BRAKE FOR DISPENSING USE

Today the use of towelling paper is widely spread. From a practical point of view it is advantageous to place the paper roll in a holder. There are holders to be fixed on the wall or kept under the cupboard or on the table.

Known are for instance holders, where a pole is fixed to the base, and this pole then forms the centeraxis of the paper roll. This holder easily tips over and furthermore it is not provided with a brake, in which case the use of both hands is needed for taking a paper. Known is also a holder, where as in the above holder there is a base and a center pole and on the top of the center pole a plate with a hole into which the central pole is fitting. This plate has enough weight to have a braking effect on the paper roll. In this holder malfunctions have been observed, it may tip over and the braking system does not always function.

Mainly due to the design of the towel paper and WC paper holders, the paper rolls for these have been manufactured by rolling paper around a core. However, the core cannot be utilized. Considering the overall manufacturing of towelling and WC roll paper and the like, the manufacturing of unutilized cores is extensive.

Paper rolls are also manufactured without core and in this case they are intended to be unwound from the center of the paper roll. However, this results in the paper being twisted like a cord.

In a holder according to this invention dispensing use of paper manufactured with or without cores can easily be done. The material used for the core could be used for the real product, the paper itself.

By using a design according to this invention the paper will when pulling easily unwind and break with a little jerk.

- 5 The characteristics of the invention appear in the patent claims.

In Figure 1-5 one embodiment of the invention is presented. In Figure 1 a side view of the invention, in Figure 2A a  
10 horizontal section of a paper roll with a core, in Figure 2B a horizontal section of a paper roll without a core, in Figure 3 detail A, in Figure 4 a vertical section and in Figure 5 the holder seen from above are shown.

- 15 The invention comprises a heavy base, part 1 in Fig. 1, to which one or two suitably shaped column-like parts 2a and/or 2b in Fig. 1 are fixed, in between which a suitable gap x in Fig. 3 is left. Below the case with both part 2a and 2b is dealt with. Along the inner edges of part 2a and  
20 2b there are small protuding edges, 11a and 11b. In Fig. 3 the outer edges of parts 2a and 2b are provided with suitably shaped cutting edges, 10a and 10b. The invention also comprises a ring-shaped and in its other end wedge-shaped part 3 in Fig. 2A and 2B, its smallest dimension  
25 being slightly bigger than the full paper roll and which is mounted in bearings 4a and 4b of parts 2a and 2b in Fig. 2A and 2B. The invention also comprises a spring-mounted or in points 6a and 6b of parts 2a and 2b bearing-mounted or fixed cover 5 in Fig. 5 to hold the paper roll in its  
30 place especially if the paper roll is not vertical, to which cover a spring 7 in Fig. 4 is fixed. In the cover 5 in Fig. 5 there is an opening 8. In the base 1 in Fig. 4 a spring 9 in Fig. 4 is fixed. Round the board core 12 in Fig. 4 there is the paper roll 13 and part 14 in Fig. 4  
35 represents the paper.

The loading of the roll holder with rolls with core as shown in Fig. 2A is done so that cover 5 and ring-shaped part 3 in Fig. 1 both will be lifted up and turned about 180°. After this paper roll 13 in Fig. 4 will be put into its place so that spring 9 in Fig. 4 fits into board core 12 in Fig. 4, when needed guided by hand and paper 14 in Fig. 2A will be threaded through gap x in Fig. 3 between parts 2a and 2b in Fig. 2A. The opening 8 in cover 5 in Fig. 5 facilitates threading paper 14 in Fig. 2A. Finally the ring-shaped part 3 in Fig. 1 and cover 5 will be turned so that they both are resting on roll 13 in Fig. 1.

If the paper roll has no core it is possible to get along only with part 3 in addition to parts 1, 2a and 2b and hence leave out parts 5, 7, and 9 as well as bearings 6a and 6b in Fig. 4.

The loading of the roll holder with rolls without core as shown in Fig 2B is done so that the ring-shaped part 3 in Fig. 1 will be lifted up and turned about 180°. After this paper roll 13 in Fig. 2B will be placed against the column-like parts 2a and 2b and paper 14 in Fig. 2B will be threaded through gap x in Fig. 3 between parts 2a and 2b. Finally the ring-shaped part 3 in Fig. 1 is turned back so that it rests on paper roll 13 in Fig. 1.

The form, roughness and weight of part 3 in Fig. 2A and 2B, the form, roughness and weight of cover 5 in Fig 4 and spring forces and roughness of surfaces of springs 7 and 9 are all chosen so that by pulling paper 14 in Fig. 4 with an even speed roll 13 unwinds easily but with a small jerk paper 14 breaks at its perforation line using only one hand.

Because ring-formed part 3 is wedge-shaped it touches paper roll 13 in the two points 15a and 15b hence giving side stability to roll 13. The more paper 14 in Fig. 2A and

2B is pulled and the diameter of paper roll 13 decreases, the more the ring-shaped part 3 because of its own weight and bearings 4a and 4b will move downwards in which case paper roll 13 all the time will be in a wedge consisting of  
5 four outer points 15a, 15b and the touching points at 2a and 2b. When pulling paper 14 in Fig. 2A and 2B, the paper roll rotates under a braking force as part 3 presses paper roll 13 and springs 7 and 9 press board core 12 of paper roll 13 in Fig. 4 against column-like parts 2a and 2b in  
10 Fig. 2 in which case the friction as well as the braking effect increase. The tear-off can also be facilitated by furnishing column-like parts 2a and 2b with suitably protruding inner edges 11a and 11b in Fig. 3.

15 The invention can be designed in many ways depending on the size of the roll, the strength of the paper material etc. If perforated paper is not used, outer edges 10a and 10b of parts 2a and 2b could be provided with a necessary serration.

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Generally the holder is placed for example on a table. The holder can be formed and built of many materials e.g. steel, plastic coated thread-like metal structure, metal profiles, injection moulding etc in which case the design  
25 may be different.

By reforming base 1 in Fig. 1 and by replacing the gravity force by suitable springs the holder can be manufactured to stay on the table, to be fixed to the wall etc. The gravity  
30 force of ring-shaped part 3 in Fig. 2A and 2B can be replaced by an external spring or the like, the form, weight and roughness of cover 5 and form, roughness of the surfaces, and spring force of springs 7 and 9, of which only one or both can be outside roll 13 and hence pressing  
35 on the outer part of roll 13 so that the ring-shaped part 3 in Fig. 2A is not needed, or if rolls with or without cores are used, part 3 in Fig. 2A and 2B is shaped and its

weight and roughness of the surface chosen so that neither cover 5 with its spring 7 nor spring 9 is needed, in which case also the roll could be horizontal. The ring-shaped part 3 in Fig. 4 can be one or several and being several 5 they can be combined with each other with a spring or the like or the ring-shaped part 3 in Fig. 4 has a bearing in only one of the column-like parts 2a or 2b in Fig. 2A or 2B and there is just one column-like part 2a or 2b in which part 3, shaped as an open loop or several loops, has a 10 bearing mounting.

## CLAIMS

1. A paper roll holder with brake for dispensing use of paper and the like characterized in that one or two close  
5 to and at a distance of  $x$  from each other at the external face of the paper roll (13) placed column-like parts (2a) and/or (2b) which is/are fixed to the base (1) and cover (5) which is mounted in bearings to said column-like part/parts (2a) and/or (2b) and to which a spring (7) is  
10 fixed and a spring (9) which is fixed to said base (1) and which press said paper roll (13) against said parts (2a) and/or (2b).

2. A paper roll holder with brake for dispensing use of  
15 paper and the like characterized in that one or two close to and at a distance of  $x$  from each other at the external face of the paper roll placed column-like parts (2a) and/or (2b), which is/are fixed to said base (1) and one or several ring-shaped and suitably wedge-shaped or elastic  
20 parts (3) mounted in bearings to said parts (2a) and/or (2b), which press/presses said paper roll (13) against said parts (2a) and/or (2b).

3. A paper roll holder with brake for dispensing use of  
25 paper and the like as claimed in claim 2, characterized in that it comprises one or several ring-shaped and suitably wedge-shaped part/parts (3) and said parts (3) are connected with a spring or similar and that said column-like parts (2a) and/or (2b) are/is provided with a cutting edge  
30 such as serration.



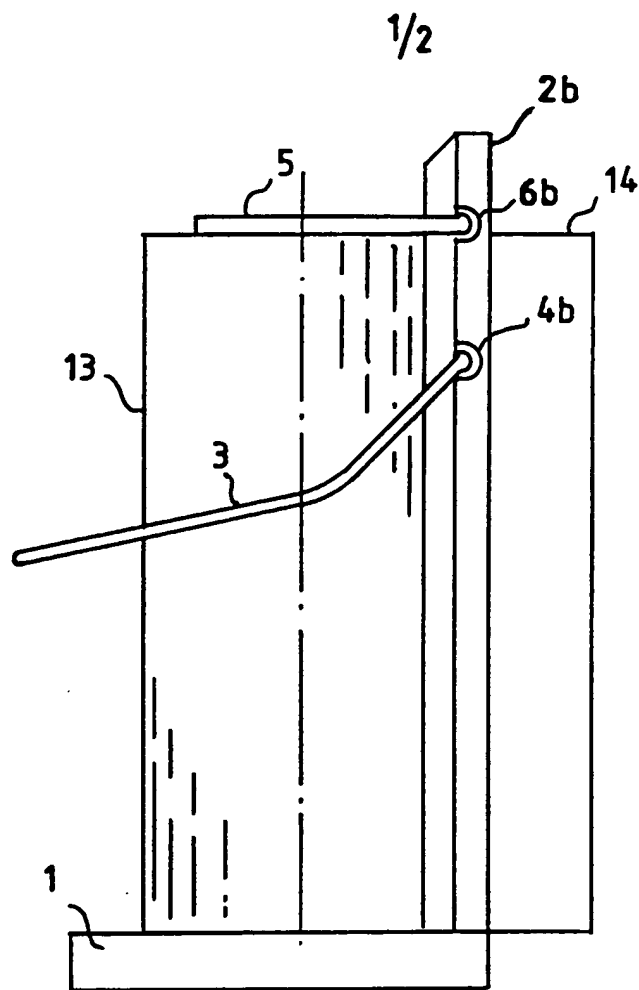


FIG 1

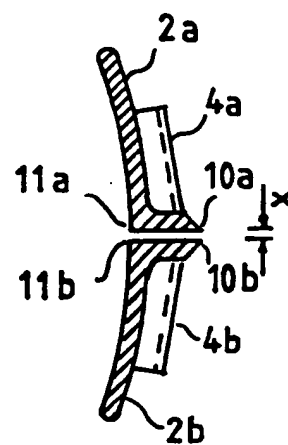


FIG 3  
DET A

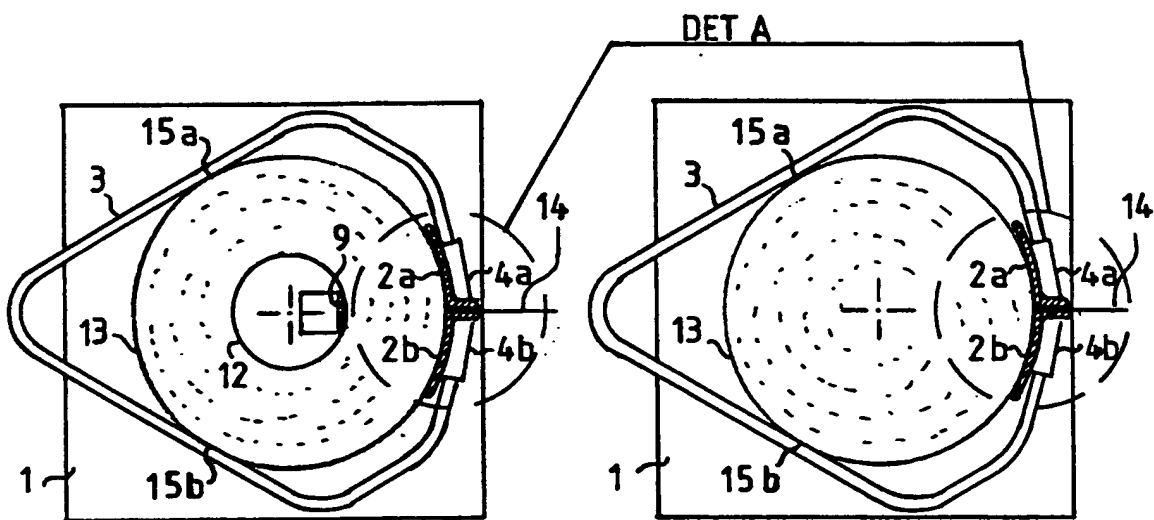


FIG 2A

FIG 2B

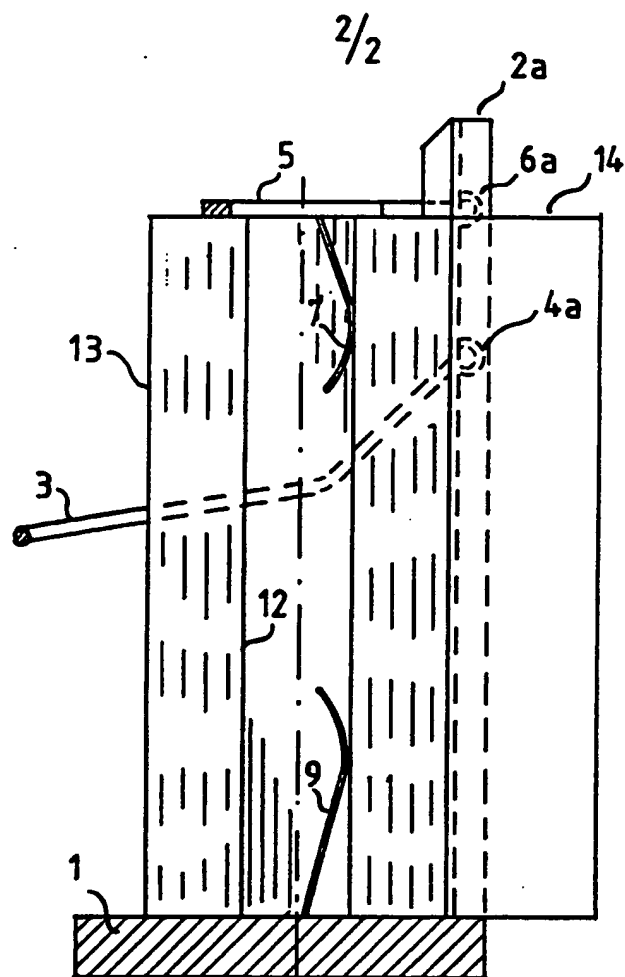


FIG 4

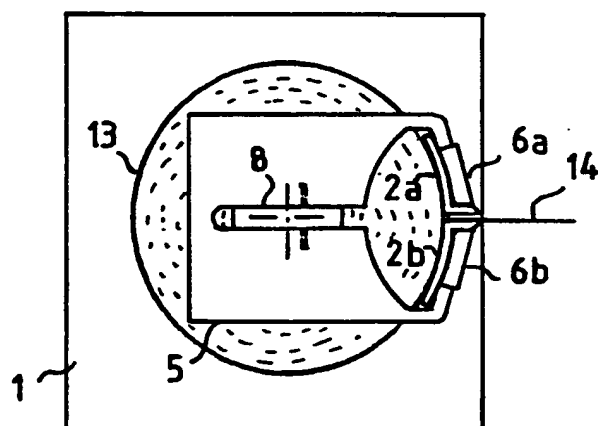


FIG 5

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 94/00204

## A. CLASSIFICATION OF SUBJECT MATTER

IPC5: A47K 10/22, A47K 10/38

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC5: A47K, B65H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US, A, 4720053 (R.F. VANCE), 19 January 1988 (19.01.88), figure 1, abstract	1,2
A	US, A, 1518749 (M. NELSON), 9 December 1924 (09.12.24), figure 1	1,2

☐ Further documents are listed in the continuation of Box C.
 ☒ See patent family annex.

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US-A- 4720053	19/01/88	NONE	
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